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DOCUMENT-IDENTIFIER: US 5192559 A

TITLE: Apparatus for building three-dimensional objects with sheets

Detailed Description Text (74):

A second advantage of this embodiment is that it is not limited to the use of materials that solidify in response to synergistic stimulation (e.g. photopolymers), but instead, can be used with a much broader range of materials, including metals, and plastics and other non-reactive materials. A particularly advantageous choice of material is a carbon/aluminum matrix or sandwich, in which carbon is added so that the material will more strongly absorb the laser light. If carbon were not added, the aluminum might reflect the laser light and not ablate.

Detailed Description Text (136):

A ninth embodiment is directed to employing a multi-layer sheet or film for each cross-section, where each layer may be of a different material. This embodiment corresponds to items A.4.g (the material of choice is a modified reactive polymer sheet with two layers of reactive material) of the previous outline. FIG. 9(A) illustrates this approach; in which films a, b, and c are comprised of layers 41a and 42a, 41b and 42b, and 41c and 42c, respectively. Layers 41a, 41b, and 41c are all comprised of a second material, while layers 42a, 42b, and 42c are all comprised of a first, but different, material. Alternatively, the materials can be the same photopolymer, but with a different amount or type of photoinitiator added to the material in each layer. Moreover, the films are advantageously prepackaged, as illustrated in FIG. 9(C), in which the film "a" is packaged between a MYLAR film backing 44, and a polyethylene film 43, and then dispensed from a cartridge dispenser or the like in the course of building up the part. As discussed previously, means must be provided for peeling off the MYLAR or polyethylene backings in the course of building up the part.

CLAIMS:

3. The apparatus of claim 1 wherein said source of synergistic stimulation is selected from the group consisting of a thermal print head and an LED print head.

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